

REMARKS / ARGUMENTS

1. Status of Application

This application includes claims 1-13. Claims 1-13 were rejected in the Examiner's office action mailed on May 5, 2004.

2. Discussion

a. Claim Rejections – Claims 1-8 and 10-13

Claims 1-8 and 10-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,485,329 to Donofrio et al. ("Donofrio") in view of U.S. Patent No. 6,404,119 to Hidaka et al. ("Hidaka"). Applicants respectfully traverse these rejections.

First, with respect to claims 1 and 8, Donofrio and Hidaka both do not teach an electron gun "having a focus electrode and an anode electrode" as recited in the claims. Donofrio is silent with regards to the structure of its electron generating means 15, and Hidaka states that its electron gun 10 has "an in-line arrangement of cathodes which emit three electron beams" (Hidaka at col. 6, lines 53-55), which is different from the electron gun of the claimed invention (present specification at Fig. 1).

Second, as noted by the Examiner, although Donofrio discloses a cathode ray tube having a screen potential of 30 to 40 kV and an electron gun that emanates at least one electron beam (Office action at ¶ 3), the reference is silent regarding the specifics of the tube's neck portion and electron gun (*Id.* at ¶ 4). In fact, Donofrio is silent as to much more, for it does not address at all the deflection power problem and focusing performance problem described in the present specification (at ¶¶ 5-6), and more importantly, Donofrio does not teach at all a single electron-

beam type projection tube operable at a high voltage that can reduce deflection power and enhance focusing performance.

The Examiner nevertheless states that Hidaka makes up for these deficiencies of Donofrio, adding that Hidaka discloses a cathode ray tube having a first neck portion 8a having a smaller diameter than a second neck portion 8b (Office action at ¶ 5). However, the color cathode ray tube taught by Hidaka requires preparation of a short electron gun specially designed to fit in the neck part of the tube (*see* Hidaka at col. 6, lines 30-41). By contrast, in the projection tube of the present invention, the influence that is generated by enlarging the diameter of the electron gun is more important than the influence that is generated when the electron gun becomes remote from a phosphor screen (*see* present specification at ¶ 11). Consequently, the present invention does not require a specially-designed short gun.

Third, Applicants submit that there would have been insufficient motivation for one of ordinary skill in the art to have combined Donofrio and Hidaka to come up with the claimed invention. Applicants respectfully point out that Hidaka does not disclose a projection tube as understood by persons of skill in the art and disclosed in the specification of the present application, which uses a single-beam electron gun, does not use a shadow mask, and projects images on a screen (*See, e.g.*, application at Figs. 1, 4-6; specification at ¶ 29). Rather, Hidaka discloses an in-line type electron gun which emits three beams, a shadow mask 4 which selects the electron beams, and a tube panel 3 on which images are displayed (*see* Hidaka at Fig. 1; col. 8, lines 13-25). There is no teaching or suggestion to use a single-beam electron gun in Hidaka, which teaches to design the tube envelope based on the distances between the center beam and the two side beams (*Id*). Accordingly, Hidaka teaches away from the use of the disclosed

structure in a single-beam tube such as a projection tube. For these reasons, Applicants submit that all the currently-pending claims distinguish over Hidaka as well as any combination of references that include Hidaka.

Therefore, Applicants submit that the Examiner has failed to cite a combination of prior art which discloses each and every claim limitation, which thus renders the present rejection an impermissible “obvious to try” rejection (M.P.E.P. §§ 2143.03, 2144, 2145 X.B). Nor does the Examiner cite to any teaching or suggestion in Hidaka, Hart, or anywhere else in the prior art, to optimize the neck diameters of a projection-type cathode ray tube (*Id.*, §§ 2143.01, 2143). As such, Applicants submit that the present rejection of claims 1 and 8 would also fail to meet the Examiner’s burden of producing a case of *prima facie* obviousness (*Id.*, §§ 2142, 2143).

Moreover, both Donofrio and Hidaka teach away from combination with each other by including specific teachings that conflict with those of the other reference. As noted above, Hidaka teaches to design a tube envelope based on the positions of a three-beam electron gun, while Donofrio teaches to use only a single electron beam. Thus, based upon these two references, a person of ordinary skill in the art would not be inclined to use the teachings of Hidaka to design a tube for the electron gun of Hart, because Hidaka only provides design guidance for a tube enveloping a three-beam gun. (See M.P.E.P. § 2141.02).

Consequently, Applicants submit that neither claim 1 or 8 could be obvious over Donofrio in view of Hidaka, as such a combination would appear to be impossible or inoperative. Since the other pending claims, claims 2-7 and 9-13 depend from claim 1 or 8, they too are not obvious over Donofrio in view of Hidaka.

b. Claim Rejections – Claim 9

With respect to claim 9, the Examiner rejected this claim over the combination of Donofrio and Hidaka (*i.e.*, for the same reasons that were cited for the rejection of claims 1-8 and 10-13 above) and further in view of U.S. Patent No. 6,133,685 to Konda et al. Applicants submit that claim 9 is patentably non-obvious for all the reasons Applicants stated above in connection with the non-obviousness of claim 1-8 and 10-13.

c. Advantage of the Preferred Embodiment


Applicants also note that the preferred embodiment has the advantageous effect that the electron beam does not impinge on the inner wall of the neck portion of the tube.

4. Conclusion

It is respectfully submitted that the present application as amended is in condition for allowance and prompt notification thereof is requested. If the prosecution of this application can be advanced by a telephone conference, the Examiner is requested to call the undersigned at (212) 530-5363.

Respectfully submitted,

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